

Appl. No. 10/728,875

Amendments to the Specification:

Please replace the former title of the application "Diversity Hand-Off Apparatus and Method" with a new title "Methods and Systems for Combining Data Frames in Diversity Hand-Off"

Please replace the paragraph starting on p. 1, line 1 with the following amended paragraph:

Related Applications

This Application contains subject matter which is related to co-pending U.S. Patent Application No. ~~<attorney docket 50935-1>~~ 10/728,874 filed on the same day as this Application and co-pending U.S. Patent Application No. ~~<attorney docket 50935-3>~~ 10/728,807 filed on the same day as this Application.

Please replace the paragraph starting on p. 10, line 27 with the following amended paragraph:

Referring to Figure 3, shown is a flow chart of a method of processing data frames, in accordance with an embodiment of the invention. At step 301, a processing path of a plurality of processing paths in which a data frame is to be processed is determined. At least one of the processing paths is a generic processing path in which different types of data frames may be processed and at least one of the processing paths is adapted for processing one type or a limited number of types of data frame. At step 302, the data frame is processed using the one or more processing engines associated with the determined processing path. In some embodiments of the invention, each processing engine forms part of at least one of the processing paths and is implemented in one of hardware, generic software and data frame type specific software.

Please replace the paragraph starting on p. 17, line 20 with the following amended paragraph:

Referring now to Figure 5B, shown is a flow chart of steps used by the Iub/Iur Rx 120 of Figure 4 in parsing the received data frames and pre-pending static headers if required. At step 310, if a data frame is required to be parsed to obtain additional information required for further processing, the data frame is parsed (step 320) and the information is stored for further processing (step 330). At steps 320, 330, the information being extracted from the data frame

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corresponds to TBs (Transfer Blocks) in the data frame and each TB is stored. The "TB" terminology originates in the UMTS standards. More generally, the data frame at this point can be parsed into one or more payload sequences, a payload sequence being a portion of the payload of the data frame. In some embodiments, each payload sequence has a plurality of quality indicators associated with it. At step 335, if there is information associated with the data frame which is to be made available for use by any one or more of the processing engines (for example the FP layer 210, the MAC layer 220, the RLC layer 230, the DHO 130, Power Control 140, Ciphering 150, Express Path 160, and Iu Tx 170) for processing of the data frame, this information is inserted into a static header which is stored with the parsed data. When the data frame is required for further processing the static header is pre-pended to the data frame for use by any one or more of the processing engines. Context information in the static header is then readily available allowing the processing engines of Figure 3 to rapidly make use of efficient look-ups. In some embodiments of the invention, the information in the static header depends on the type of data frame. For example for voice data, the size and number of TBs may be stored in the as part of the information in the static header. At step 310 if parsing is not required, a static header is pre-pended to the data frame, if required, for further processing (step 336). For example, in one embodiment of the invention, at step 336, a FT (Frame Type) that indicates whether the data frame carries control data is extracted from a header of the received data frame to determine whether the data frame carries control information, and, if so, a static header which contains, for example, transport layer IDs (Ethernet/ IP headers, for example), process IDs, and internal context pointers, is pre-pended to the data frame. The data frame is then forwarded for further processing (step 340). In some embodiments, processing path determination is performed, for example using steps 280, 290, 300, and the data frames are then forwarded on. In another embodiment, processing path determination is performed and then the data frames are parsed, for example using steps 320, 330 before being forwarded on. In another embodiment, processing path determination and static header pre-pending are performed. In another embodiment, all of these functions are performed. The last embodiment is shown in Figures 5A and 5B. Furthermore, more generally pre-pending of a static header is performed at any one or more of the processing engines of the off-load engine 400.

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Please replace the paragraph starting on p. 31, line 11 with the following amended paragraph:

Referring to Figure 11B, shown is a table which will be used as an illustrative example of the method of Figure 11A being applied to combine the four payload portions 701, 702, 703, 704 of Figure 10A into the combined data frame ~~716~~ 706 of Figure 10B. For purposes of clarity, the illustrative example will show how the portions 701, 702, 703, 704 are combined into portion 706 of Figure 10B only for corresponding TBs 720. Column 1011 identifies the CRCI of the corresponding TB 720 for each of the data frames. In particular, in rows 1021, 1022, 1023, 1024 of column 1011, the CRCI of TB 720 for data frames containing payload portions 701, 702, 703, 704, respectively, are given.